

NATURAL RESOURCES



Fall 1999

a Study and Inventory

Chatham Township Environmental Commission

TOWNSHIP OF CHATHAM

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FOREWORD

This Natural Resources Inventory updates and enhances the original 1974 Chatham Township Natural Resources Inventory. The Inventory describes the environmental factors of Chatham Township and its environs, an inventory of the undeveloped land of the Township, and the methodology and sources of information employed in the course of assembling the inventory.

This Inventory contains information to aid the Planning Board in its Master Plan review function. It is intended to aid both the Planning Board and Board of Adjustment with their development review functions. Its information will aid applicants to the Planning Board and Board of Adjustment as they complete stormwater plans, grading plans, or environmental impact statements for their development applications.

EXECUTIVE SUMMARY

Geology

Chatham Township's geological history is a critical factor in shaping its land area. The Wisconsin glacier receded from the area approximately 15,000 years ago. It left behind glacial Lake Passaic, part of which evolved into the Great Swamp among other Passaic River wetlands. The glacier was responsible for creating valley aquifer systems, areas of which include Chatham Township. In the mid-1980's, the Environmental Protection Agency designated the Buried Valley Aquifer in northern New Jersey as a sole source aquifer because it supplied water to over half a million people in thirty-one municipalities. Chatham Township is one of these towns.

Recent research by the New Jersey Geologic Society also identifies an important aquifer recharge area running across the northerly part of the town, roughly, between Shunpike and Southern Boulevard and westward along Shunpike and Woodland Roads. This recharge zone supplies the Chatham Valley aquifer.

Water

Chatham Township is water resource rich with a little under one third of its land area dominated by the Great Swamp. Because of concerns regarding negative impacts to the swamp from increasing development and expanded sewer facilities, in 1989 the Commissioner of the New Jersey Department of Environmental Protection issued an administrative order establishing the Great Swamp Watershed Advisory Committee (GSWAC). The committee was created to study and make recommendations regarding the Great Swamp. One of the studies was a hydrologic budget, completed by hydrologic consultants. The results of the study indicate increased volumes of stormwater runoff flow into the swamp, but not necessarily through it. Increased annual volumes of surface runoff from land use changes between 1963 and 2000 were seen to be mostly the result of decreased evapotranspiration and, to a lesser degree, decreased groundwater recharge. Should this continue, flooding in and around the Great Swamp may increase. The importance of evapotranspiration in the water budget strongly suggests that retention of shade trees is extremely important in controlling stormwater runoff.

Another study in 1997 on stormwater runoff establishes that developed areas in the watershed are creating much higher than expected stormwater runoff volumes. The conclusion was that the extensively disturbed soils in the 1/2 acre density residential area studied were responsible.

Open Space

Chatham Township's privately owned open space dropped from 1,915 acres in 1978 to 1,260 acres in 1997 (a 34% decrease) according to data from the Township planning consultant. Since the original Natural Resource Inventory was published in 1974, Chatham Township has sustained substantial losses in three of the ten inventoried sites. One area called "the Orchard" (Long Hill above Meyersville Road) now has 3 new streets: Tree Top Lane, Molino Drive and Jodi Lane. The second, called "Southern Boulevard", has a new road and the stream crossing under Southern Boulevard near Jay Road has been partially contained in a large pipe. The third area, the "Averett Site," south of river Road, now supports 900 townhouses, tennis courts, swimming pools, and a small sewage treatment plant. Its natural streams are now drainage ways and the pond that used to be in a wooded setting is now a detention facility.

INTRODUCTION

Chatham Township is located in Morris County, New Jersey, which lies in the north-central part of the State. It is primarily a residential community with a small amount of commerce and no industry. Railroad and road connections provide access to Morristown, Summit, Murray Hill, Newark, and New York.

Since 1920, the Township's population has increased from 736 people to approximately 9831 in 1997 (Figure 1). Most of that growth occurred in the 1950's and created the need for wastewater facilities for the increased population.

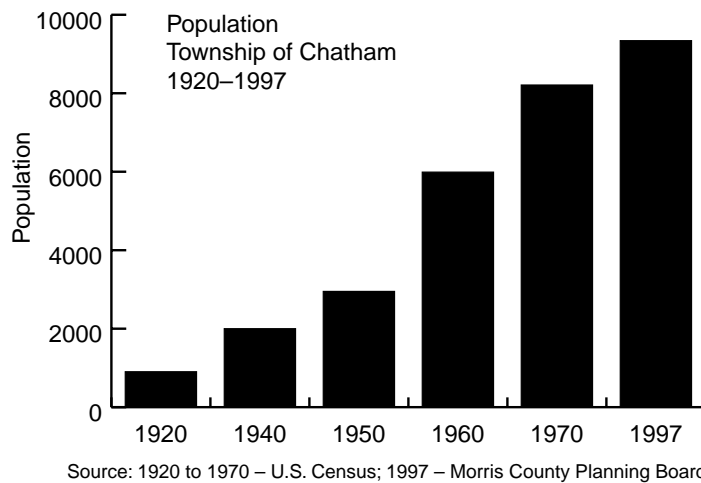


Figure 1—Chatham Township Population

Development in Chatham Township is concentrated in the eastern portion of the Township and along the slopes of Long Hill. A significant portion of the Township is owned by the U.S. Government's Great Swamp National Wildlife Refuge or by the Morris County Park Commission (Figure 2). Chatham Township is located in an area of considerable geologic and topographic diversity. The configuration of the land, composition of the soils, movement of water, and the amount and types of vegetative cover shape how the Township has developed and will continue to develop in the future.

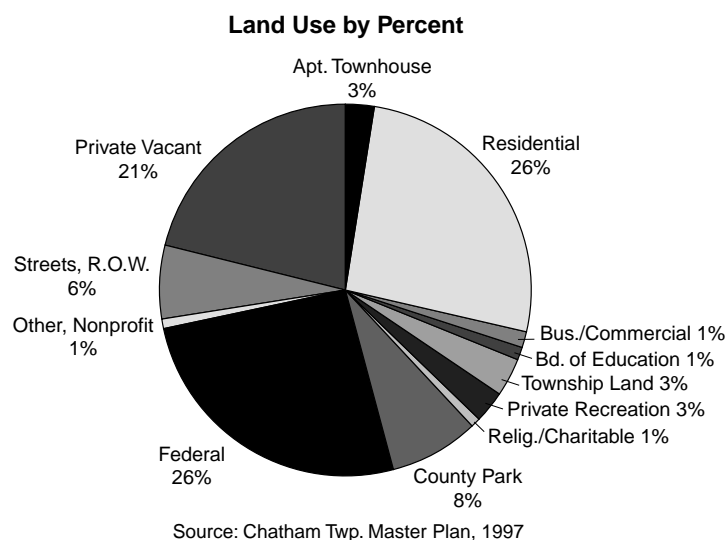


Figure 2 — Chatham Land Use by Percentage